

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A device for sterilization in production of packages, which is adapted for sterilization with a gaseous sterilizing agent kept in the gaseous phase throughout the sterilization process, said device comprising a heating zone, a sterilization zone, a venting zone, an ambient temperature sensor located outside of the device for sensing the ambient temperature outside the device where the sterilizing agent does not flow, a relative humidity sensor for measuring the relative humidity outside the device where the sterilizing agent does not flow, a concentration meter for measuring the concentration of sterilizing agent in the sterilization zone, and a first control unit for controlling the amount of sterilizing agent introduced in the sterilization zone based on the temperature measured by the ambient temperature sensor, the relative humidity measured by the relative humidity sensor and the concentration measured by the concentration meter.

2. (Previously Presented) A device as claimed in claim 1, further comprising a package start temperature sensor for sensing the temperature of the packages entering the heating zone.

3. (Previously Presented) A device as claimed in claim 1, further comprising a package heating temperature sensor for sensing the temperature of the packages before entry into the sterilization zone.

4. (Previously Presented) A device as claimed in claim 1, further comprising a feedback circuit for controlling the heating in the heating zone based on the temperature of the packages.

5. (Previously Presented) A device as claimed in claim 1, further comprising a condensation detector for detecting condensation in the sterilization zone.

6. (Previously Presented) A device as claimed in claim 1, further comprising means for maintaining a higher pressure in the sterilization zone than in the heating zone and venting zone.

7. (Previously Presented) A device as claimed in claim 1, wherein said zones are separated from each other by means of partitionings having openings for the passage of packages.

8. (Previously Presented) A device as claimed in claim 1, which is adapted for sterilization with a gaseous sterilizing agent in the form of gaseous hydrogen peroxide.

9. (Previously Presented) A device as claimed in claim 1, which is adapted to sterilize packages having an open end and a closed end, wherein the sterilized packages are subjected to filling.

10. (Previously Presented) A device as claimed in claim 9, wherein the heating zone comprises means for heating the packages to a temperature above a dew point of the sterilizing agent used in the sterilization zone.

11. (Previously Presented) A device as claimed in claim 9, wherein the venting zone comprises means for venting away the sterilizing agent used in the sterilization zone from the packages after sterilization.

12. (Previously Presented) A device as claimed in claim 9, further comprising means for controlling a flow of gaseous sterilizing agent in the sterilization zone, such that the gaseous sterilizing agent flows essentially in a direction from the open end of the packages towards the closed end of the packages.

13. (Previously Presented) A device as claimed in claim 12, wherein the means for controlling the flow of gaseous sterilizing agent are arranged to introduce the gaseous sterilizing agent in a top portion of the sterilization zone and to evacuate the gaseous sterilizing agent in a bottom portion of the sterilization zone, maintaining a flow of gaseous sterilizing agent essentially from top to bottom.

14. (Previously Presented) A device as claimed in claim 9, further comprising means for controlling a venting air flow in the venting zone, such that the venting air flows essentially in a direction from the open end of the packages towards the closed end of the packages.

15. (Previously Presented) A device as claimed in claim 14, wherein the means for controlling the flow of venting air are arranged to introduce the venting air in a top portion of the venting zone and to evacuate the venting air in a bottom portion of the venting zone, maintaining a flow of venting air essentially from top to bottom.

16. (Previously Presented) A device as claimed in claim 1, which is adapted to sterilize itself internally.

17. (Previously Presented) A device as claimed in claim 16, further comprising means for heating the interior of the device.

18. (Previously Presented) A device as claimed in claim 1, comprising a unit for production of the gaseous sterilizing agent.

19. (Previously Presented) A device as claimed in claim 1, further comprising a filling zone for filling packages, and means for maintaining a higher pressure in the filling zone than in the venting zone.

20-35. (Cancelled)

36. (Previously Presented) A device as claimed in claim 1, further comprising:

nozzles arranged to introduce hot sterile air in a top portion of the heating zone; and

outlets in a bottom portion of the heating zone for withdrawing the sterile air.

37. (Previously Presented) A device as claimed in claim 36, further comprising a second control unit for regulating the temperature of the hot sterile air introduced into the heating zone to heat packages therein to a temperature above a dew point of the sterilizing agent.

38. (Previously Presented) A device as claimed in claim 13, further comprising:

nozzles in fluid communication with the unit for production of the gaseous sterilizing agent, wherein the nozzles are arranged to introduce the gaseous sterilizing agent in a top portion of the sterilization zone; and

outlets in a bottom portion of the sterilization zone for withdrawing the gaseous sterilizing agent from the sterilization zone.

39. (Previously Presented) A device as claimed in claim 38, further comprising a catalyst unit in fluid communication with outlets in a bottom portion of

the sterilization zone for degrading the gaseous sterilizing agent withdrawn from the sterilization zone.

40. (Previously Presented) A device as claimed in claim 38, wherein the first control unit controls the operation of the unit for production of the gaseous sterilizing agent.

41. (Previously Presented) A device as claimed in claim 5, further comprising a third control unit in communication with the condensation detector, wherein the third control unit is operable to send a signal to control the temperature and/or flow of hot air in a gas production unit which produces the sterilizing agent.

42. (Previously Presented) A device as claimed in claim 1, further comprising:

nozzles arranged to introduce sterile air in a top portion of the venting zone; and

outlets in a bottom portion of the venting zone for withdrawing the sterile air from the venting zone.

43. (Previously Presented) A device as claimed in claim 19, further comprising:

nozzles arranged to introduce sterile air in a top portion of the filling zone; and outlets in a bottom portion of the filling zone for withdrawing the sterile air from the filling zone.